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Supplementary Notes on the Erysiphaceae

By E. S. Salmon, F.L.S.

(Concluded from page 210)

Excluded or doubtful Species

Erysiphe album Fries, Observ. Myc. **1** : 207. 1815. *E. album* Achar.—There is no specimen of this plant in Fries' herbarium at Upsala, but I have seen the single specimen that the Acharian herbarium at Lund possesses. There is, unfortunately, no trace of any fungus now to be found on the leaf mounted on the sheet labeled *Erysiphe album*. As the description given by Fries ("*Erysiphe album*, receptaculo tenuissimo subnullo, capitulis nigris. In foliis *Juglandis* in Helvetia. Nudo oculo ut puncta alba apparet") is altogether inadequate to make identification possible, the name must be allowed to drop.

I have been able, through the kindness of M. P. Hariot, to examine the types contained in the Paris Museum, of the following, published by Mérat, in "Revue de la Flore Parisienne," 459. 1843.

"*Erysiphe lathyri* Mérat.—Granules très fins, spheriques, noirs, rares, sans apparence de filaments basilaires, naissant sous les feuilles du *Lathyrus latifolius* L."

The minute irregularly shaped black bodies on the leaves are not of fungous origin, but are probably the excrementa of some animal.

"*E. saxifragae Sibericae* Mérat.—Le dessous des feuilles de cette plante [*Saxifraga Siberica*] a parfois, en été, des myriades de petits granules noirs, sphériques ; d'autres fois, comme cylindroïdes, un peu pënicillés (à la loupe), avec l'apparence d'une membrane ténue, à reflet argenté dans leurs intervalles."

The bodies here described have certainly nothing to do with the Erysiphaceae. They are not, I think, of fungous origin, but appear to be the work of mites.

E. tiliae Mérat.—Les granules sont d'une finesse excessive, peu abondants, noirs, arrondis, et reposent sur des taches blanchâtres, qui décolorent en cel endroit le dessous des feuilles du Tilleul où on les observe. La loupe ne découvre aucun filament basilaire dans cette plante."

The discolorations here referred to are the work of mites, the bodies of which occur on the leaves; the black rounded granules are their excrementa.

Hazslinzky (**27**, p. 182) has described a fungus as follows (I am indebted to Professor A. Mágócsy-Dietz for the translation from the Hungarian).

"*Calocladia bicornis* (Wallr.) *b. rosae* Wallr. Das Mycelium besteht aus sehr spärlichen Fäden. Perithecien zerstreut und nicht zahlreich, mit 7–8 Asci; die Asci mit 7 Sporen Auf den Blättern der *Rosa cinnamomea* in der Umgebung von Eperjes, Königreich Ungarn."

It is impossible from this description to identify the fungus. Wallroth (Ann. Wett. Ges. **4**: 238. 1819) described a species as *Alphitomorpha rosarum*, on *Rosa cinnamomea*, and later (Fl. Crypt. Germ. **2**: 755. 1833) placed it as a variety under "*A. penicillata*." This plant of Wallroth's has never been identified by later authors.

Roumeguère (**64**) reported in 1880 the occurrence of an *Erysiphe* on *Prunus Laurocerasus* at Tarbes (Hautes-Pyrénées) France, which he named as a new species, *Erysiphe Bertoloni*. The author observed that the leaves of the *Prunus* were abundantly covered in July with *Oidium Passerini* Bertol. fils. The only description given of the *Erysiphe* runs as follows: "Quelques périthéces (fines ponctuations noirâtres), analysés par moi m'out moutré dans chaque conceptacle 4 thèques ovoïdes renfermant 5–7 spores de couleur brune. Je ne peux rapporter cette Erysiphée à aucune espèce connue." It is impossible to say from this description what the fungus was, but the brown spores, if correctly described, preclude it from belonging to the Erysiphaceae. Dr. R. Ferry informed me that no specimen of "*E. Bertolini*" is to be found in Roumeguère's herbarium.

Spegazzini (**79**) had described an *Erysiphe* as a new species under the name of *E. deserticola*, with the following diagnosis: "Amphigena; subiculum submembranaceum canescens arcte adnatum, peritheciis sparsis globosis atris, ascis paucis 2–4-spermis, sporis subcylindricis obtusis. *Hab.* ad folia *Hoffmanseggiae* cujusdam in deserto Valle de Santa María, prov. Salta, Jan. 1897.—*Obs.* Subiculum tenue e pulverulento membranaceo-subcrustaceum matrice arctissme adpressum canescens, ex hyphis densissime intertextis tenuibus (3–4 μ crass.) ramulosis septulatis hyalinis efformatum: perithecia pauca sparsa amphigena globoso-depressa (100–150 μ diam.) atro laevia astoma, hyphis basalibus paucis radiantibus radicata, tenui-membranacea, contextu minute parenchymatico e ferrugineo ochraceo; asci pauci ovati v. obovati (50–60 μ long. x 25–35 μ diam.) brevissime stipitati aparaphysati, 2–4-spermi; sporae subcylindraceae (40 μ long. x 12 μ crass.) utrimque obtusissimae e latere (praecipue in parte media) compressae, laeves, hyalinae, tenuiter tunicatae, nubiloso-farctae."

In the specimen sent to me by Professor Spegazzini I was unable to find more than one or two quite immature (yellowish) perithecia. The subpersistent mycelium is of the same appearance and consistency as that commonly found in examples of *E. polygoni* (*e. g.*, in specimens on *Geranium*, *Anemone*, *Polygonum erectum*, *Peucedanum Oreoselinum*, etc.), and there are no characters given in the diagnosis quoted above, except that of the length of the spores, to separate "*E. deserticola*" from this cosmopolitan species.

Although "*Erysiphe euphorbiae* Peck" (= *Microsphaera euphorbiae* Berk. & Curt.) has been twice recorded from Belgium—by Bommer and Rousseau, Bull. Soc. Roy. Bot. Belg. **25**: 169. 1886, and Lambotte, Fl. myc. Belg. Supp. **1**: 90. 1887—it is very improbable that the fungus found really belonged to this North American species. The examples recorded by Bommer and Rousseau occurred on *Euphorbia amygdaloides*. In specimens (now in the Kew herbarium) sent by Mme. Bommer, from "Poix (Belgique), Sept. 1885," on which the record mentioned above was based, no perithecia are to be found. Dr. Lambotte informs me that no specimens exist of the example recorded by him. The description given in Fl. myc. Belg. (*l. c.*), it may be noted, is a repetition of Peck's original diagnosis (Reg. Rep. **26**: 80. 1874), and has therefore probably not been drawn up from characters shown by a Belgian plant. It is quite possible that the "*E. euphorbiae*" of Belgium is *Sphaerotheca euphorbiae* (Cast.). Serbinov (**76**) records "*Erysiphe* (?) *euphorbiae* Peck," on *Euphorbia virgata*, from Russia; I have seen no specimens of this.

Microsphaera diffusa Cooke & Peck has been recorded by Serbinov (**76**) on *Lathyrus pratensis* L. from St. Petersburg, Russia. *M. diffusa* is a North American (United States) species, and the

Russian plant, I am inclined to think, will prove more probably to belong to the European species *M. Bäumleri* P. Magn.

Serbinov (**76**) has described as a new variety of "*Erysiphe lamprocarpa* Lév.," from Russia, the following plant on *Polemonium coeruleum*:

> "Var. *polemoniacearum* Serb. Varietas amphigena, mycelio denso, niveo, persistente, peritheciis globosis, maioribus compactius gregariis, appendicibus fuscis, haustoriis partim lobulatis, partim non lobulatis, ascis (5–8) constante bisporis." "Unter dem von Prof. Schmalhausen gesammelten Materiale fand ich bei Bestimmung desselben eine Form auf Blättern von *Polemonium coeruleum* L., welche sehr der *Erysiphe lamprocarpa* (Wallr.) Lév. ähnelt, und sich jedoch durch folgende Merkmale von obiger Art unterscheidet: Die Perithecien sind etwas grösser und sehr dicht gedrängt, die Haustorien bei einigen Exemplaren *non lobulati*, bei anderen *lobulati*, während sei bei *E. lamprocarpa* stets *non lobulati* sind. Nach De Bary sind bei *E. lamprocarpa* 2 oder 3 Ascosporen, bei den von mir untersuchten Formen stets nur 2 Ascosporen."

I have not seen a specimen of this plant; from the description above given it seems to be a form intermediate between *E. cichoracearum* and *E. galeopsidis*.

Serbinov (**76**, p. 23) records finding a species of *Erysiphe* in an immature condition on the leaves of *Betula alba* (*B. verrucosa* Ehrh.), in the neighborhood of St. Petersburg.

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HOST-INDEX

(All records have been personally verified, except in the case of those plants prefixed by *, the authority for these will be found indicated in the list of host-plants given under the species in question.)

Acer opulifolium, palmatum, spicatum Ukuruduense	U. aceris.
*Aconitum variegatum	E. polygoni.
Actinostemma racemosum	E. polygoni.
Adesmia sp.	P. corylea.
*Aesculus Hippocastanum	P. corylea.

Alchemilla Helvetica	S. humuli.
*Alhagi maurorum	E. polygoni.
Alnus incana glauca, viridis	P. corylea.
Amelanchier Asiatica	P. corylea.
Anarthrophyllum rigidum	P. corylea.
*Anemone nemorosa	E. polygoni.
Arabis alpina	S. humuli fuliginea.
*Arctium minus	S. "Castagnei."
*Artemisia maritima Stechmaniana	E. cichoracearum.
*A. serrata	E. cichoracearum.
*Aster sp.	E. polygoni.
A. *azureus, *lateriflorus, *Novae-Angliae, *undulatus	E. cichoracearum.
*Ballota nigra	E. polygoni.
Berberis vulgaris	M. alni.
*Betula pumila	M. alni.
*Bidens bipinnata	E. cichoracearum.
B. pilosa	S. humuli fuliginea.
Bowlesia tenera	E cichoracearum.
*Brassica oleracea	E. polygoni.
Bromus mollis, *unioloides	E. graminis.
*Bupleurum linearifolium	S. "Castagnei."
Caesalpinia sepiaria	P. corylea.
*Calamintha Acinos	E. galeopsidis.
C. umbrosa	S. humuli fuliginea.
*Calendula arvensis, *fulgens	E. cichoracearum.
*C. fulgens	S. humuli.
Caragana frutescens	M. euonymi.
*Carpinus Americana	M. alni.
*Catabrosa aquatica	E. graminis.
Celtis *Boliviensis, *Selloviana, Sinensis	U. polychaeta.
C. Sinensis	U. Clintonii.
*Centaurea Babylonica	S. "Castagnei."
C. *Cyanus, pectinata	E. cichoraceorum.
Ceratonia Siliqua	Oidium ceratoniae Comes (see p. 188).
*Cerinthe sp.	E. taurica
Chionanthus Virginica	M. alni.
*Cineraria sp.	E. cichoracearum.
Clerodendron trichotomum	S. humuli fuliginea.
Cnicus arvensis	E. cichoracearum.
* " "	S. "Castagnei."
*Coreopsis trichosperma	S. humuli fuliginea.
Corylus rostrata Sieboldiana	M. alni (forma).
*Crataegus nigra	P. corylea & P. oxyacanthae.
C. parvifolia	P. corylea.
C. sanguinea, *tanacetifolius	P. oxyacanthae.
Crepis virens	S. humuli fuliginea.
*Cytisus capitatus	E. polygoni.

*C. purpureus	E. cichoracearum.
Delphinium hybridum, Maackianum	E. polygoni.
*Desmodium sp.	P. corylea.
D. podocarpum Japonicum	E. polygoni.
*Dinebra Arabica (cult.)	E. graminis.
*Dipsacus silvestris	E. polygoni.
*Dorycnium herbaceum	E. taurica.
*Echinops sp.	E. polygoni.
*Echinospermum Lappula	E. cichoracearum.
Echium vulgare	E. cichoracearum.
Embothrium coccineum	P. corylea.
*Epilobium obscurum	S. humuli.
*Euonymus Europaeus	"M. euonymi. borealis."
*Eupatorium ageratoides	E. cichoracearum.
Euphorbia sp.	E. cichoracearum.
E. *Cyparissias, palustris	S. euphorbiae.
*E. virgata	"E. (?) euphorbiae" (see p. 304).
Excoecaria sp.	P. corylea.
Fragaria (cult.)	S. humuli.
*Fraxinus oxyphylla	P. corylea.
*Galeopsis Ladanum	E. galeopsidis.
Geranium dissectum	S. humuli.
G. *pratense, *Robertianum	E. polygoni.
Geum Chiloënse	E. polygoni.
G. rivale	S. humuli.
*Hedera Helix	U. salicis (see p. 97).
*Helianthus parviflorus	E. cichoracearum.
*Heuchera Americana	E. polygoni.
*Hieracium umbellatum	E. polygoni.
* " "	E. cichoracearum.
Hoffmanseggia sp.	"E. deserticola" (see p. 303).
*Holcus lanatus	E. graminis.
*Hydrophyllum appendiculatum, *macrophyllum	E. cichoracearum.
*Hypericum tetrapterum	E. polygoni.
*Ilex verticillata	M. alni.
Impatiens Balsamina	S. humuli fuliginea.
Inula Britannica	E. cichoracearum.
*Isopyrum thalictroides	E. polygoni.
*Juglans sp.	P. corylea.
Lamium amplexicaule	E. galeopsidis.
Lathyrus *Clymenum, montanus, *niger	E. polygoni.
L. niger	M. ? Bäumleri.
*L. ochroleucus	E. polygoni.
L. palustris	M. alni.
*L. palustris	E. polygoni.
*L. pratensis	M. diffusa (see p. 304).

L. venosus, *vernus	E. polygoni.
*Leonurus Cardiaca	E. polygoni.
Lonicera hirsuta, Sullivantii	M. alni.
*Lolium perenne	E. graminis.
Lupinus angustifolius	E. polygoni.
*Lycopersicum esculentum	E. polygoni.
Magnolia Yulan	P. corylea.
Marrubium peregrinum	E. taurica.
*Melampyrum silvaticum	E. polygoni.
*Mentha arvensis	E. polygoni.
Microseris tenella	S. humuli fuliginea.
*Milium effusum	E. graminis.
Myoschilos oblongum	M. alni.
*Myosotis sp	E. polygoni.
* “ “	E. cichoracearum.
M. *collina, *palustris, *sparsiflora, *stricta	E. cichoracearum.
*Onobrychis Crista-galli	E. polygoni.
Papaver Rhoeas	E. polygoni.
Parietaria *Canadensis, *Judaica	E. cichoracearum.
*Phaseolus vulgaris	E. polygoni.
*Phlomis Herba-venti	E. cichoracearum.
P. tuberosa	E. galeopsidis.
Phtheirospermum Chinense	S. humuli fuliginea.
*Physalis sp.	S. polygoni.
P. Alkekengi	E. cichoracearum.
*Pilea pumila	E. cichoracearum.
*Pisum arvense	E. polygoni.
*Plantago Coronopus	E. cichoracearum.
*P. major	S. “Castagnei.”
Pleurospermum Uralense	E. polygoni.
*Poa alpina	E. graminis.
*Polemonium coeruleum	“E. lamprocarpa polemoniacearum” (see p. 305).
*Populus sp.	P. corylea.
P. suaveolens	U. salicis.
*Potentilla collina	S. humuli.
*P. reptans	P. oxyacanthae tridactyla (see p. 85).
*P. Sibbaldi	S. humuli.
Prunus Grayana	P. oxyacanthae tridactyla.
*P. Persica	P. oxyacanthae.
*Pyrus Aucuparia	P. oxyacanthae tridactyla.
*P. communis	P. leucotricha.
*P. Malus	P. corylea.
Quercus cinerea	M. alni extensa.
Q. discolor	M. alni.

Q. glandulifera	S. lanestris.
Q. glandulifera	U. septata.
Q. Kelloggii	P. corylea.
Q. serrata	M. alni.
Ranunculus *nemorosus, *recurvatus	E. polygoni.
*Rhabdosciadium Aucheri	E. polygoni.
Rhus succedanea, vernicifera	U. verniciferae.
Ribes Magellanicum	P. corylea.
Robinia Pseudacacia	E. polygoni.
Rosa *Eglanteria, *fragrans	S. pannosa.
Rubus *Idaeus, villosus	S. humuli.
*Ruta Buxbaumii	? E. taurica (see p. 198).
Salix gracilistyla, multinervis, stipularis	U. salicis.
*Salvia glutinosa	E. cichoracearum.
*S. officinalis	E. galeopsidis.
Saussurea sp.	E. taurica.
Saxifraga punctata	S. humuli fuliginea.
Scabiosa stellata, succisa	E. polygoni.
Scutellaria *lateriflora, *pilosa	E. galeopsidis.
Sedum Telephium purpureum	E. polygoni.
Senecio cineraria	S. humuli fuliginea.
S. *erucifolius, Fuchsii	E. cichoracearum.
S. Muehlenbergii	S humuli fuliginea.
S. *silvaticus, *viscosus	E. cichoracearum.
Sisymbrium officinale	E. polygoni.
*Sium latifolium	E. polygoni.
*Solidago latifolia	E. cichoracearum.
*Sonchus oleraceus	E. polygoni.
Styrax Japonicum	M. alni
Symphytum tauricum	E. cichoracearum.
Syringa vulgaris	M. alni lonicerae.
“ “	P. corylea.
Tagetes minuta	E. galeopsidis.
Teucrium Scorodonia	E. galeopsidis.
*Thesium alpinum	E. polygoni.
*Tilia sp.	P. corylea.
T. Miqueliana	U. Miyabei.
*Torilis Anthriscus	E. polygoni.
*Tragopogon pratensis	S. humuli.
Trifolium agrarium, *spadiceum	E. polygoni.
Ulmus parvifolia	U. clandestina.
Urtica urens	E. polygoni.
*Vaccinium Vitis-Idaea	P. oxyacanthae.
*Valeriana officinalis	E. polygoni.
*Valerianella sp.	E. polygoni.
*V. olitoria	E. polygoni.
Verbascum Lychnitis	E. taurica.
“ “	E. cichoracearum.
Veronica *Chamaedrys, *orientalis, *spuria	S. “Castagnei.”

V. Virginica var. Sibirica	S. humuli.
Vicia *tenuifolia, venosa capitata	E. polygoni.
*Vitis cordifolia	U. necator.
*Willughbya scandens	E. cichoracearum.
*Zinnia elegans	E. cichoracearum.

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